

Lesson Plan Session 1

Presenting GeoGebra Practical Session

General aspects:

1. *Learning Goals:*

To develop an understanding of the use of GeoGebra in mathematics teaching

To develop problem solving skills using GeoGebra as a technological tool

2. *General strategy:*

Working practically in GeoGebra in pairs and/or groups, alongside discussing the use of technology

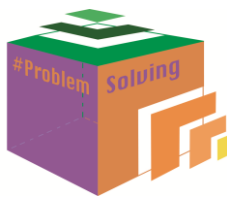
3. *Structure*

Lesson segments: Trying out some of the tools in GGb, work in pairs investigating GGb, drawing special tasks, work in pairs, logging in to the GeoGebra materials on the website, logging in to a GGb group and sharing materials.

4. *Resources:*

PowerPoint presentation, GGb Cards and pc/tablet

Development of the Lesson:



Work in pairs



40 mins

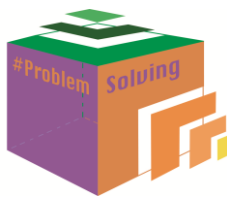
Draw a flag
Pick a flag that is appropriate in difficulty and draw the flag using different shapes and possibilities of reflections, transformations

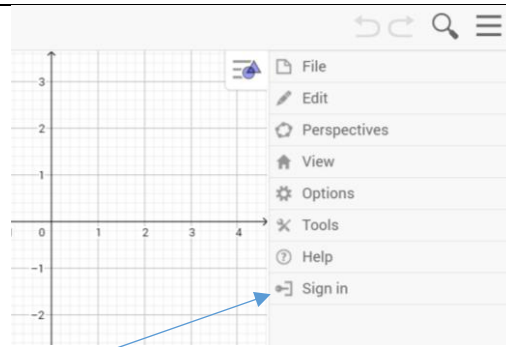
Beware that the students are drawing their chosen flags in the right ratios. It is also important that they use the different tools I Ggb and that their constructions/drawings are made on the right geometric sentences and definitions.
Make space for every trial and have the students sharing their drawings in a Padlet (or something else that can collect their work)
Let the students formulate questions/problems and ask if anyone in the group can help by explaining what they have done.

Goal: The students learn to use different geometric relocations and constructions. E.g. perpendicular, parallel, reflect and rotate.

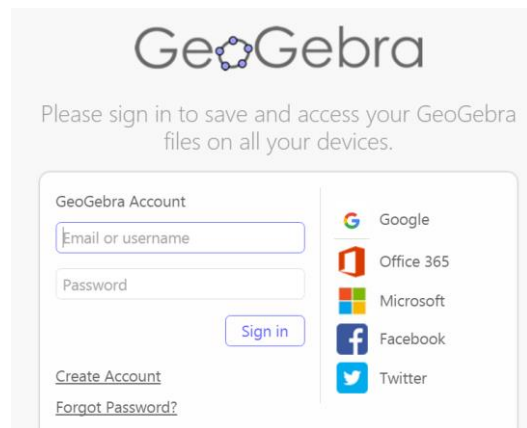


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Logging in to the GeoGebra materials on the website demands that you sign in:



15 mins

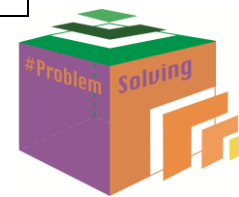
When you are working in GGB you can save your work in three different ways:

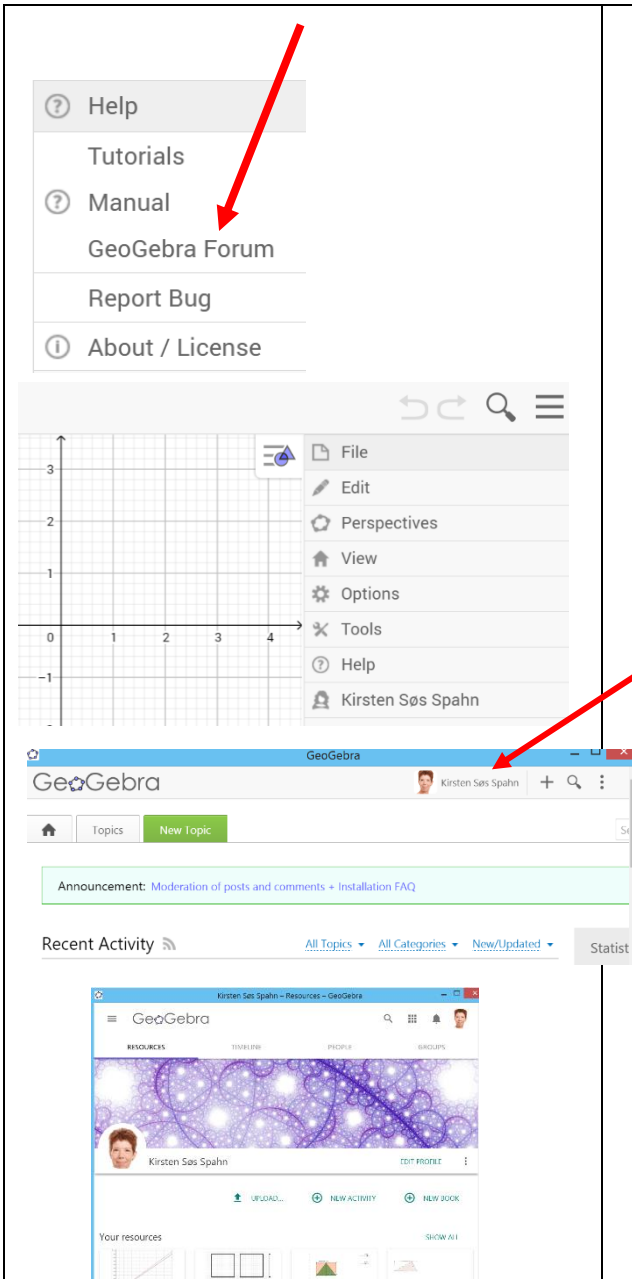
- Private
- Shared with link
- Public

You need to make an account in GGB, which you easily do with any email (gmail is the easiest).

Show the students how to get to the forum and show them their possibilities to save their own work and how to use work made by other people.

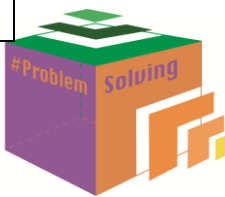
Goal: The students learn how to save and find materials in GGB-forum.

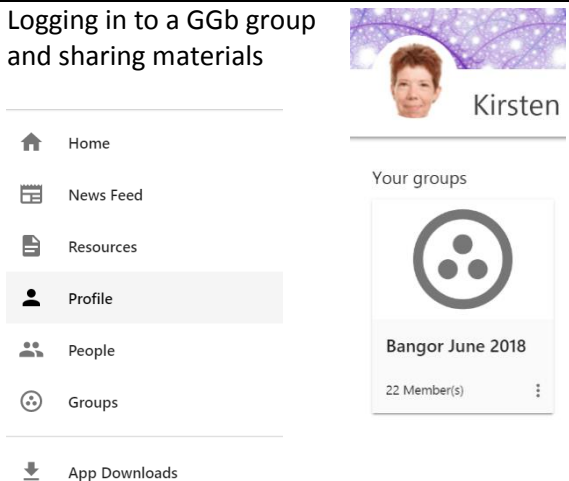


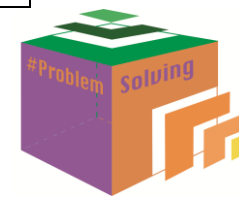


When you have made an account you see your name below the menu.
If you choose Help, you are taken to a menu, where you can choose 'GeoGebra Forum'

A new window appears where you see the recent activity in the forum, and if you click on your own name you get to your profile.



		<p>If you want you can find a lot of materials that the people using Ggb have made public. You can translate them to your own language after having made a copy. Then you can share the file with your students - or anybody else.</p>		
<p>Logging in to a Ggb group and sharing materials</p> 	10 mins	<p>If you want to pose problems or share some Ggb files with a certain group of people, you can make a Ggb group. When you have made the group, you get a code that you can share with the people you want to participate in the group.</p>		
Work in pairs investigating GGb	30 mins	Working in pairs investigating how to draw different shapes in GGb and colour the shapes in different colours.		<p><i>Goal:</i> To sharpen the student's communication in math and expand their vocabulary of</p>





#1: the students choose a card and draw themselves what is on the card.

#2: the students work in pairs. It is important that they are sitting opposite each other, because they must not be able to see each other's computer screens.

Student 1 choose a card and formulates to student 2 how to draw what is on the card. Student 2 is not allowed to see what is on the card, but has to listen carefully drawing what student 1 is telling him/her to draw. Change roles and repeat.

Summarize on the findings and let the students compare the card with their own drawings to see if they have done what they were told or talk about the quality of the mathematical conversation - did the instructor choose the correct mathematical concepts?

mathematical concepts.

